

REMARKS

Claims 1-17 are pending in the application. Applicant has amended Claims 2 and 3. No new Claims have been added. Claim 18 has been canceled. No new matter has been added.

Objection to Drawings

The Examiner has objected to the drawings under 37 CFR § 1.83(a), asserting that one or more features recited in Claim 18 are not shown in the drawings. Applicant respectfully submits that the objection currently is moot in light of the cancellation of Claim 18.

Rejection under 35 U.S.C. § 112, first paragraph

The Examiner has rejected Claim 18 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. The Examiner specifically asserts that there is no disclosure as to how a brake shoe can be molded in one piece with a spring given the rest of the disclosure. Applicant respectfully traverses the rejection. Applicant respectfully submits that one skilled in the art would know how to mold such a structure without further disclosure than that provided in the Specification. There are a variety of brake components that are molded together and that technology has been known to those skilled in the art since prior to the present application. However, in light of the cancellation of Claim 18, this rejection currently is moot and Applicant respectfully

requests withdrawal of the rejection.

Rejection under 35 U.S.C. § 102(b) - Cunningham

The Examiner has rejected Claims 1-4, 6-13, 15 and 16 under 35 U.S.C. § 102(b) as being anticipated by Cunningham. As part of this rejection, the Examiner has asserted that a “pad is interpreted as the element that contacts the element to be braked against in order to stop the relative motion.” Applicant respectfully traverses this rejection. First, the Cunningham reference is misapplied when used in connection with a frictional braking system. A ratchet/pawl mechanism is limited to stopping rotation in one direction only, unlike a brake system, such as that claimed in the present invention, which stops relative motion in **both** clockwise and counterclockwise directions. Moreover, the ratchet/pawl mechanism does not use friction to stop relative motion (Applicant notes that Claim 4 specifically calls for “frictional engagement against the housing.”). Rather, the pawl physically intervenes between two teeth of the ratchet, as seen in the Cunningham reference, to form a structural lock of the two components. As a result, Applicant respectfully submits that application of the Cunningham reference to the above-referenced claims is not appropriate because a ratchet/pawl system cannot be construed as a brake pad engaging a housing as a braking surface, as claimed.

Even if the Cunningham reference could be applied to claims relating to frictional braking, application of Cunningham to Claims 1-4, 6 and 7 does not and cannot meet all of the claim limitations in those claims. Claim 1 (and thus all claims dependent therefrom) requires that the first brake shoe brake pad is biased against the motor housing

by the first spring and that the pad disengages from the housing when rotation of the drive shaft exceeds the minimum rotational velocity. Cunningham's pawl does not engage nor does it disengage from the motor housing (which reasonably can be viewed as either housing 20 or housing 26 in the Cunningham reference). A separate component, the ratchet 18, is used. Nothing in Cunningham teaches or suggests the use of the motor housing as a braking surface, as claimed in Claim 1.

Based on the foregoing, Applicant respectfully submits that application of the Cunningham reference to the cited claims is inappropriate. Moreover, even if Cunningham is applicable to the cited claims, Cunningham neither anticipates nor renders obvious the subject matter of the above-referenced claims. Applicant therefore respectfully requests withdrawal of the rejection of Claims 1-4, 6-13, 15 and 16.

Rejection under 35 U.S.C. § 103(a) - Newport + Swartwout

The Examiner has rejected Claims 1-18 under 35 U.S.C. § 103(a) as being unpatentable over Newport in view of Swartwout. The Examiner asserts that Newport discloses a support, brake shoes with pads, springs and flyweights, but not hinging the brake shoes and flyweights to the support. The Examiner further asserts that Swartwout teaches hinging the flyweights and brake shoes to the support and that it would have been obvious to one of ordinary skill in the art at the time the invention was made to hinge the brake shoes and flyweights to the support as taught by Swartwout in the brake of Newport as it allows for more sensitive reaction of the brake device. Applicant respectfully traverses the Examiner's rejection for the reasons stated below.

Newport shows a brake in which the brake shoes 42, 44 act linearly to engage and disengage from drum 38. This linear motion is a complex mechanism within the brake and requires translating rotational motion into linear motion in a system that requires very precise balance of spring forces to assure symmetrical braking forces. Moreover, the braking mechanism of Newport is configured to operate inside the (unnumbered) housing of Figure 3 of Newport, as evidenced by the outer contouring of the brake shoes 42, 44. The linear type of spring configuration 46, 48 of Newport, as is well known to those skilled in the art, is typically not well balanced, due to asymmetry of the spring rates, etc.

Swartwout uses L-shaped flyweights 42 to physically block rotation (much like the ratchet/pawl mechanism of Cunningham), rather than friction between brake pads and a braking surface. The flyweights 42 engage a blocking plate-like stop 56 to prevent rotation when the flyweights 42 are in their vertical orientation, as seen in Figure 4 of Swartwout. One of the flyweights 42 “runs into” the stop 56 to prevent further reverse rotation. There is no bi-directional capability in the Swartwout system. Flyweights 42 also are cams that operate to help move the lower ends 42a of flyweights 42 out of engagement with stop 56 (see Swartwout, Col. 4, line 55 to col. 5, line 22). Therefore, Swartwout fails to suggest any application of its configuration to a bi-directional, friction-based braking system.

One skilled in the art would not look to combine Newport and Swartwout as suggested by the Examiner for several reasons. First, the compact nature of the Newport configuration is not susceptible to flyweights and hinged components that require space to “swing out” during operation. Second, while Newport uses friction to brake rotation,

Swartwout uses physical blocking akin to the Cunningham configuration. Finally, Newport's configuration clearly teaches linear motion for the brake shoes when moving into or out of engagement with the braking surface, which is inconsistent with Swartwout's teaching.

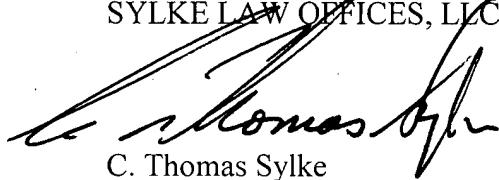
Applicant's claimed invention uses a combination of frictional brake pads that pivot (due to hinging) to provide benefits not taught or suggested by the cited references, either alone or in combination. First, Applicant's claimed invention permits bi-directional braking, stopping rotation in either direction. Ancillary to bi-directional stopping is the fact that bi-directional rotation is available, such as when the brake pads are still engaging the braking surface, but starting to rotate with the shaft. Second, Applicant's claimed invention utilizes the device in which it operates as the braking surface (for example, a motor housing or other available structure). The pivoting nature of the brake shoes and flyweights in Applicant's claimed invention permit use of braking surfaces that may not be planar and may not have a prescribed orientation to the brake pads. Thus Applicant's invention can be used on cylindrical surfaces, curved surfaces, etc., due to the highly adaptive nature of the hinging and brake pad configuration. This last benefit makes Applicant's claimed invention especially attractive as a retrofit component on motors and the like. All of the cited references require very specific structures that are not as easily retrofitted into/onto existing equipment.

For the foregoing reasons, Applicant respectfully submits that the pending claims are allowable. Applicant respectfully requests allowance at an early date. Applicant's counsel would be happy to discuss any questions the Examiner might have concerning the application by telephone at the Examiner's convenience.

Dated: January 4, 2006

Respectfully submitted,

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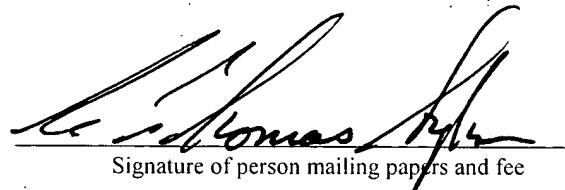
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Date of Deposit: January 4, 2006

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